

# APPROVAL CERTIFICATE

DNV·GL

This is to certify, that the undernoted products have been approved in accordance with the relevant requirements of the DNV GL Approval System.

Certificate No. **46 769 - 12 HH**

Company **ONTOP B.V.**  
**Oude Veerseweg 23**  
**4332 SH Middelburg, NETHERLANDS**

Product **EXHAUST GAS SYSTEMS**

Type **METALOTERM AD / AM**

Technical Data /  
Application **TECHNICAL DATA**

<b>Size range</b>	<b>130 [mm] up to to 800 [mm]</b>
<b>Min. thickness outer skin</b>	<b>min. 0.5 [mm] up to 400 [mm] tube size</b> <b>min. 0.6 [mm] from 450 [mm] up to 700 [mm]</b> <b>tube size</b> <b>min. 0.8 [mm] up to 800 [mm] tube size</b>
<b>Min. thickness inner liner</b>	<b>min. 0.5 [mm] up to 400 [mm] tube size</b> <b>min. 0.6 [mm] from 450 [mm] up to 700 [mm]</b> <b>tube size</b> <b>min. 0.8 [mm] up to 800 [mm] tube size</b>
<b>Material</b>	<b>outer liner ASTM 304 / 316 L / 1.4549</b> <b>inner liner ASTM 304 / 316 L / 316 Ti / 1.4549</b>
<b>Insulation</b>	<b>mineral fibre min. 37.5 [mm] thickness</b>
<b>Max. working pressure</b>	<b>5000 [Pa]</b>
<b>Working temperature</b>	<b>up to 550 [°C]</b>

Approval Standard **• According to the Rules of Machinery of Germanischer Lloyd**

Documents **• Test report No. 98630197 of Materialprüfungsamt, Abt. Bauphysik, Lärmschutz und Lufteinhaltung dated 13.02.1986**  
**• Test Report No. TE 87819 of the Loss Prevention Council Laboratories dated 02.08.1996**

Remarks **• The installation of the exhaust gas systems is to be carried out in accordance with the instructions of the manufacturer.**

Valid until **2017-03-16**

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File No. **XI.B.03**

**Hamburg, 2015-12-04**

**DNV GL**

  
Olaf Drews

  
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## RANGE OF APPLICATION

The aforementioned exhaust gas systems are approved and can be used on ships classed by Germanischer Lloyd under consideration of the GL Rules Chapter 2-Machinery Installations, Section 11.M 1, Section 12, B.4.1, and Section 2.G.7.

## PRODUCTION PLACE

ONTOP B.V.  
Oude Veerseweg 23  
4332 SH Middelburg  
NETHERLANDS

## MARKING

Each device shall bear legible and durable marking on the body or on a plate fixed securely to the body as follows:

- Manufacturer`s Mark • Identity Number • Nominal Diameter ••

## REMARKS / LIMITATIONS

- The selection of the Exhaust Gas System for the corresponding application and the right installation are to be in accordance with the instructions of the manufacturer. For penetration of fire divisions GL type approved pipe penetrations are to be used

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www.dnvgl.com

  
Olaf Drews

  
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